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EXAMINER	
HOLLAR, ANDREA B	

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/965,013	BOHRER ET AL.	
	Examiner	Art Unit	
	Andrea Hollar	2142	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☒ Claim(s) *1,2,5-7,11,15 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 September 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/28/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

AB/H

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 120, 122, 123, and 130. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: on page 5, lines 17 and 18 the reference number 211 is used to reference both "buffer logic" and "network link." A reference number may not reference two different items.

Appropriate correction is required.

Claim Objections

Claim 1 is objected to because of the following informalities: on lines 7 and 10 the phrase "the link" lacks antecedence, on lines 12-13 the phrase "the current bandwidth" lacks antecedence, on line 13 the phrase "the server-switch link" lacks antecedence, and on lines 14-15 the phrase "the modified operating frequency closer" is believed to be a typographical error. Perhaps "the modified operating frequency is closer" was intended. Appropriate correction is required.

Claim 2 is objected to because of the following informalities: on line 18 "the server-switch link" lacks antecedence. Appropriate correction is required.

Claim 5 is objected to because of the following informalities: on line 28 the phrase "the effective date rate" lacks antecedence. It is believed that "date" is a typographical error. Perhaps "data" was intended. Appropriate correction is required.

Claim 6 is objected to because of the following informalities: on line 2 the phrase "the current bandwidth" lacks antecedence, and on line 4 the phrase "the prior operating frequency" lacks antecedence. Appropriate correction is required.

Claim 7 is objected to because of the following informalities: on line 21 "the current bandwidth of the link" lacks antecedence. Appropriate correction is required.

Claim 11 is objected to because of the following informalities: on line 4 the phrase "the effective date rate" lacks antecedence. It is believed that "date" is a typographical error. Perhaps "data" was intended. Appropriate correction is required.

Claim 15 is objected to because of the following informalities: on line 25 the limitation "a network interface card configured to connect the server device to a central switch over an" appears to be incomplete. The limitation will be examined as best understood. Appropriate correction is required.

Claim 18 is objected to because of the following informalities: on line 15-16 the phrase "the effective date rate" lacks antecedence. It is believed that "date" is a typographical error. Perhaps "data" was intended. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "materially different" renders the claim unclear. The claim will be examined as best understood.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said

subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horspool in view of Aharoni.

With respect to claim 1, Horspool discloses a method of operating a data processing network comprising:

performing an initial negotiation between a server (col. 1, lines 10-11) of the network and a switch (col. 1, line 10) to which the server is connected, wherein the initial negotiation establishes an initial operating frequency of the link between the server and the switch (col. 4, lines 8-9);

and responsive to determining that an effective data rate is materially different than the current bandwidth of the server-switch link, performing a subsequent negotiation to establish a modified operating frequency, wherein the modified operating frequency is closer to the effective data rate than the initial operating frequency (col. 4, lines 15-18).

Horspool does not expressly disclose that determining an effective data rate of the server is based on network traffic communicated over the link.

Aharoni teaches that a bandwidth value can be determined by examining network traffic communicated over a network channel (col. 13, lines 29-36).

Horspool and Aharoni are analogous art because they are both from the same field of endeavor of transferring information over a network having a varying bandwidth capacity.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool's method by replacing Horspool's method of determining link integrity with Aharoni's method of determining bandwidth based on network traffic, replacing Horspool's error threshold with a bandwidth threshold, and by forcing Horspool's port speed down if the data rate is below the bandwidth threshold.

The motivation for doing so would have been to enable Horspool's method to have an improved measurement of link performance.

Therefore it would have been obvious to combine Aharoni with Horspool for the benefit of an improved measurement to obtain the invention as specified in claim 1.

With respect to claim 2, Horspool further discloses that the modified operating frequency is the lowest operating frequency accommodated by the server-switch link that is sufficient to handle the effective data rate (col. 4, line 18).

With respect to claim 3, Horspool further discloses repeating, at specified intervals during the operation of the network, the determination of the effective data rate and the contingent initiation of a subsequent negotiation (col. 4, lines 13-15).

With respect to claim 4, Horspool further discloses that the initial and subsequent negotiation are compliant with the IEEE 802.3 standard (col. 2, lines 12-16).

With respect to claim 5, Horspool does not expressly disclose that determining the data rate includes accumulating information indicative of the amount of network traffic during a specified interval and calculating an effective data rate based thereon.

Aharoni teaches that a bandwidth value can be determined by examining the number of acknowledged packets versus the number of transmitted packets to obtain a data rate over an interval of transmission (col. 13, lines 29-36).

Horspool and Aharoni are analogous art because they are both from the same field of endeavor of transferring information over a network having a varying bandwidth capacity.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool's method by replacing Horspool's method of determining link integrity with Aharoni's method of determining bandwidth based on network traffic, replacing Horspool's error threshold with a bandwidth threshold, and by forcing Horspool's port speed down if the data rate is below the bandwidth threshold.

The motivation for doing so would have been to enable Horspool's method to have an improved measurement of link performance.

Therefore it would have been obvious to combine Aharoni with Horspool for the benefit of an improved measurement to obtain the invention as specified in claim 5.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horspool in view of Aharoni as applied to claim 1 above, and further in view of Sweitzer.

Horspool and Aharoni disclose a method of determining whether a data rate is greater than a specified bandwidth threshold and performing a subsequent negotiation to establish a modified operating frequency, as disclosed in the discussion of claim 1, however they do not expressly disclose that the modified operating frequency is higher than the prior operating frequency.

Sweitzer teaches that two communicating computer devices can modify their data rate by raising the data rate to a rate higher than the previous rate (col. 3, lines 19-21).

Horspool, Aharoni, and Sweitzer are all analogous art because they are all from the same field of endeavor of communication networks.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool and Aharoni's method to allow the devices to raise the operating data rate upon determining that the effective data rate is higher than the specified bandwidth threshold.

The motivation for doing so would have been to provide Horspool and Aharoni's method with the ability to automatically raise the data rate in order to keep an operator from having to reconfigure the system manually if the data rate needs to be changed (col. 2, lines 61-65).

Therefore it would have been obvious to combine Horspool and Aharoni with Sweitzer for the benefit of less operator configuration to obtain the invention as specified in claim 6.

Claims 7-11, 13, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horspool in view of Aharoni, and further in view of Eldreth.

With respect to claim 7, Horspool discloses a data processing network comprising:

a central switch (col. 1, line 10);

a server device (col. 1, lines 10-11) connected to the central switch via a network link (col. 2, lines 50-52);

code means for performing an initial negotiation, wherein the initial negotiation established an initial operating frequency of the network link (col. 4, lines 8-9); and

code means for performing a subsequent negotiation to establish a modified operating frequency responsive to determining that the effective data rate is materially different than the current bandwidth of

the link, wherein the modified operating frequency is closer to the effective data rate than the initial operating frequency (col. 4, lines 15-18).

Horspool does not disclose code means for determining an effective data rate of the server based on network traffic transmitted over the link.

Aharoni teaches that a bandwidth value can be determined by examining network traffic communicated over a network channel (col. 13, lines 29-36).

Horspool and Aharoni are analogous art because they are both from the same field of endeavor of transferring information over a network having a varying bandwidth capacity.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool's network by replacing Horspool's method of determining link integrity with Aharoni's method of determining bandwidth based on network traffic, replacing Horspool's error threshold with a bandwidth threshold, and by forcing Horspool's port speed down if the data rate is below the bandwidth threshold.

The motivation for doing so would have been to enable Horspool's network to have an improved measurement of link performance.

Horspool and Aharoni do not expressly disclose that the server device includes a processor, memory, and a network interface card.

Eldreth teaches that servers can include a network interface, memory, and a processor (col. 3, line 19-20).

Horspool, Aharoni, and Eldreth are all analogous art because they are from the same field of endeavor of computer networks.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool's network station to explicitly include a processor, memory, and a network interface card. The motivation for doing so would have been to ensure that the network station has the capability to process data from the switch.

Therefore it would have been obvious to combine Horspool, Aharoni, and Eldreth for the benefits of improved measurement and processing capability to obtain the invention as specified in claim 7.

With respect to claim 8, Horspool further discloses that the modified operating frequency is the lowest operating frequency accommodated by the server-switch link that is sufficient to handle the effective data rate (col. 4, line 18).

With respect to claim 9, Horspool further discloses code means for repeating, at specified intervals during the operation of the network, the determination of the effective data rate, and the contingent initiation of a subsequent negotiation (col. 4, lines 13-15).

With respect to claim 10, Horspool further discloses that the initial and subsequent negotiations are compliant with the IEEE 802.3 standard (col. 2, lines 12-16).

With respect to claim 11, Horspool does not expressly disclose that the code means for determining the data rate includes code means for accumulating information indicative of the amount of network traffic during a specified interval and calculating an effective data rate based thereon.

Aharoni teaches that a bandwidth value can be determined by examining the number of acknowledged packets versus the number of transmitted packets to obtain a data rate over an interval of transmission (col. 13, lines 29-36).

Horspool and Aharoni are analogous art because they are both from the same field of endeavor of transferring information over a network having a varying bandwidth capacity.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool's network by replacing Horspool's method of determining link integrity with Aharoni's method of determining bandwidth based on network traffic, replacing Horspool's error threshold with a bandwidth threshold, and by forcing Horspool's port speed down if the data rate is below the bandwidth threshold.

The motivation for doing so would have been to enable Horspool's network to have an improved measurement of link performance.

Therefore it would have been obvious to combine Aharoni with Horspool for the benefit of an improved measurement to obtain the invention as specified in claim 11.

With respect to claim 13, Horspool further discloses that the initial and subsequent negotiations are initiated by the central switch (fig. 1, item 1; fig. 2, item 1; col. 3, line 4).

With respect to claim 15, Horspool discloses a server device (col. 1, lines 10-11) suitable for use in a server cluster, comprising:

a connection between the server device and a central switch (col. 2, lines 50-52);

code means for performing an initial negotiation, wherein the initial negotiation establishes an initial operating frequency of the network link (col. 4, lines 8-9);

code means for performing a subsequent negotiation to establish a modified operating frequency responsive to determining that the effective data rate is materially different than the current bandwidth of the link, wherein the modified operating frequency is closer to the effective data rate than the initial operating frequency (col. 4, lines 15-18).

Horspool does not expressly disclose code means for determining an effective data rate of the server based on network traffic transmitted over the link.

Aharoni teaches that a bandwidth value can be determined by examining network traffic communicated over a network channel (col. 13, lines 29-36).

Horspool and Aharoni are analogous art because they are both from the same field of endeavor of transferring information over a network having a varying bandwidth capacity.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool's device by replacing Horspool's method of determining link integrity with Aharoni's method of determining bandwidth based on network traffic, replacing Horspool's error threshold with a bandwidth threshold, and by forcing Horspool's port speed down if the data rate is below the bandwidth threshold.

The motivation for doing so would have been to enable Horspool's device to have an improved measurement of link performance.

Horspool and Aharoni do not expressly disclose that the server device includes at least one processor, a system memory accessible to the processor, and a network interface card.

Eldreth teaches that servers can include a network interface, memory, and a processor (col. 3, line 19-20).

Horspool, Aharoni, and Eldreth are all analogous art because they are from the same field of endeavor of computer networks.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool's network station to explicitly include a processor, memory, and a network interface card. The motivation for doing so would have been to ensure that the network station has the capability to process data from the switch.

Therefore it would have been obvious to combine Horspool, Aharoni, and Eldreth for the benefits of improved measurement and processing capability to obtain the invention as specified in claim 15.

With respect to claim 16, Horspool discloses that the modified operating frequency is the lowest operating frequency accommodated by the server-switch link that is sufficient to handle the effective data rate (col. 4, line 18).

With respect to claim 17, Horspool discloses code means for repeating, at specified intervals during the operation of the network, the determination of the effective data rate and the contingent initiation of a subsequent negotiation (col. 4, lines 13-15).

With respect to claim 18, Horspool does not expressly disclose that the code means for determining the effective data rate includes code means for accumulating information indicative of the amount of network traffic during a specified interval and calculating an effective data rate based thereon.

Aharoni teaches that a bandwidth value can be determined by examining the number of acknowledged packets versus the number of transmitted packets to obtain a data rate over an interval of transmission (col. 13, lines 29-36).

Horspool and Aharoni are analogous art because they are both from the same field of endeavor of transferring information over a network having a varying bandwidth capacity.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool's device by replacing Horspool's method of determining link integrity with Aharoni's method of determining bandwidth based on network traffic, replacing Horspool's error threshold with a bandwidth threshold, and by forcing Horspool's port speed down if the data rate is below the bandwidth threshold.

The motivation for doing so would have been to enable Horspool's device to have an improved measurement of link performance.

Therefore it would have been obvious to combine Aharoni with Horspool for the benefit of an improved measurement to obtain the invention as specified in claim 18.

Claims 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horspool in view of Aharoni, in further view of Eldreth as applied to claims 7 and 15 above, and further in view of Sweitzer.

With respect to claim 12, Horspool, Aharoni, and Eldreth disclose a method of determining whether a data rate is greater than a specified bandwidth threshold and performing a subsequent negotiation to establish a modified operating frequency, as disclosed in the discussion of claim 7, however they do not expressly disclose that the modified operating frequency is higher than the prior operating frequency.

Sweitzer teaches that two communicating computer devices can modify their data rate by raising the data rate to a rate higher than the previous rate (col. 3, lines 19-21).

Horspool, Aharoni, Eldreth, and Sweitzer are all analogous art because they are all from the same field of endeavor of communication networks.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool, Aharoni, and Eldreth's network to allow the devices to raise the operating data rate upon determining that the effective data rate is higher than the specified bandwidth threshold.

The motivation for doing so would have been to provide Horspool, Aharoni, and Eldreth's network with the ability to automatically raise the data rate in order to keep an operator from having to reconfigure the system manually if the data rate needs to be changed (col. 2, lines 61-65).

Therefore it would have been obvious to combine Horspool, Aharoni, and Eldreth with Sweitzer for the benefit of less operator configuration to obtain the invention as specified in claim 12.

With respect to claim 19, Horspool, Aharoni, and Eldreth disclose a method of determining whether a data rate is greater than a specified bandwidth threshold and performing a subsequent negotiation to establish a modified operating frequency, as disclosed in the discussion of claim 15, however they do not expressly disclose that the modified operating frequency is higher than the prior operating frequency.

Sweitzer teaches that two communicating computer devices can modify their data rate by raising the data rate to a rate higher than the previous rate (col. 3, lines 19-21).

Horspool, Aharoni, Eldreth, and Sweitzer are all analogous art because they are all from the same field of endeavor of communication networks.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool, Aharoni, and Eldreth's device to allow the devices to raise the operating data rate upon determining that the effective data rate is higher than the specified bandwidth threshold.

The motivation for doing so would have been to provide Horspool, Aharoni, and Eldreth's device with the ability to automatically raise the data rate in order to keep an operator from having to reconfigure the system manually if the data rate needs to be changed (col. 2, lines 61-65).

Therefore it would have been obvious to combine Horspool, Aharoni, and Eldreth with Sweitzer for the benefit of less operator configuration to obtain the invention as specified in claim 19.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horspool, Aharoni, and Eldreth as applied to claim 7 above, and further in view of Greenberg.

Horspool, Aharoni, and Eldreth do not expressly disclose that the initial and subsequent negotiations are initiated by the server device.

Greenberg teaches that a server can negotiate a session with a network device (fig. 7, item 708).

Horspool, Aharoni, Eldreth, and Greenberg are all analogous art because they are all from the same field of endeavor of computer networks.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool, Aharoni, and Eldreth's network to allow the end station to initiate the negotiation process with the switch or hub.

The motivation for doing so would have been to allow Horspool, Aharoni, and Eldreth's network to be used to implement a user initiated task such as web telephony (col. 1, lines 10-15).

Therefore it would have been obvious to combine Horspool, Aharoni, and Eldreth with Greenberg for the benefit of increased number of applications to obtain the invention as specified in claim 14.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horspool, Aharoni, and Eldreth as applied to claim 15 above, and further in view of Parker.

Horspool, Aharoni, and Eldreth do not expressly disclose that the network interface card includes a clock unit configured to provide a clocking signal that controls the link operating frequency, and further wherein the code means for establishing the modified operating frequency includes code means for programming a clock register that controls the frequency of the clocking signal.

Parker teaches a clock unit that outputs an operating frequency and that the frequency can be selected from settings stored in a register (fig. 1, col. 20, lines 34-35).

Horspool, Aharoni, Eldreth, and Parker are analogous art because they are all from the same field of endeavor of electronic devices.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Horspool, Aharoni, and Eldreth's device to include a clock unit within the network interface card.

The motivation for doing so would have been to provide the network interface card with a way to maintain a reliable operating (transmission) frequency to control data transfers (col. 1, lines 24-26).

Therefore it would have been obvious to combine Horspool, Aharoni, and Eldreth with Parker for the benefit of a reliable transmission frequency to obtain the invention as specified in claim 20.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea Hollar whose telephone number is (571) 272-5862. The examiner can normally be reached on 8:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack B. Harvey can be reached on (571) 272-3896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ABH